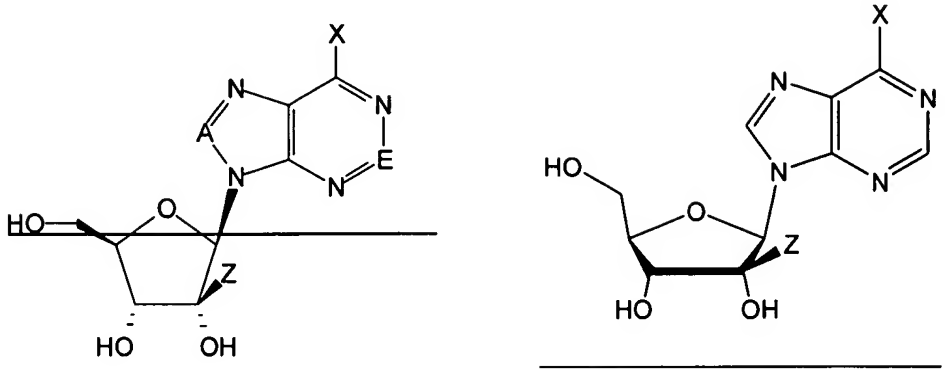
Claim listing

1. A compound according to Formula 1



Formula 1

in which Z is selected from the group consisting of an alkyl, an O-alkyl, an alkenyl, an alkynyl, and CN, wherein the alkyl, the alkenyl, or the alkynyl is optionally substituted with a halogen or OH;

~~A is CH or N, and E is C-R_6 or N, such that (1) when A is CH then E is C-R_6 or N, and (2) when A is N then E is CH;~~

X is NR_1R_2, $NR_2NR_3R_4$, $NR_2N{=}NR_3$, $NR_2N{=}CHR_3$, $NR_2N{=}O$, $NR_2C(=O)NR_3R_4$, $NR_2C(=S)NR_3R_4$, $NR_2C(=NH)NR_3R_4$, $NR_1C(=O)NR_2NR_3R_4$, NR_2OR_3, ONHC(O)O-alkyl, ONHC(O)O-aryl, ONR_3R_4, SNR_1R_2, $SONR_1R_2$, or $S(O)_2NR_1R_2$;

wherein R_1, R_2, R_3, and R_4 are independently H, alkyl, substituted alkyl, O-alkyl, cyclic alkyl, heterocyclic alkyl, alkoxy, alkaryl, aryl, heterocyclic aryl, substituted aryl, acyl, substituted acyl, $S(O)_2$-alkyl, NO, NH_2, or OH; and

R_6 is H, NH_2, halogen, N_3, NHR_1, $NHCOR_1$, NR_1R_2, $NHSO_2R_1$, $NHCONHR_1$, $NHCSNHR_1$, CH_2NHR_1, CHR_1NHR_2, $NHNH_2$, CN, alkyl, alkenyl, alkynyl, CH_2-aryl, CH_2-heterocycle, halogen, OH, or SH~~; and~~

~~wherein combination of the radicals A, E, X, and Z confer antiviral activity against HCV to the compound~~.

2. The compound of claim 1 ~~wherein A and E are CH, Z is CH_3 and~~ wherein X is NR_1R_2.

3. The compound of claim 2 wherein R_1 is CH_3, NH_2, or H, and wherein R_2 is CH_2CH_2OH, $CH_2CH_2NH_2$, OCH_3, CH_3, or OH.

4. The compound of claim 1 ~~wherein A and E are CH, Z is CH_3 and~~ wherein X is $NHNR_3R_4$.

5. The compound of claim 4 wherein R_3 is H, or CH_3, and wherein R_4 is H, CHO, $C(O)CH_3$, $C(O)OCH_3$, $S(O)_2CH_3$, or CH_3.

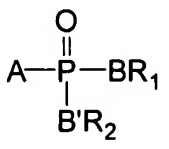
6. The compound of claim 1 wherein ~~A and E are CH,~~ Z is CH_3 and wherein X is ONHC(O)O-alkyl or ONHC(O)O-alkaryl.

7. The compound of claim 6 wherein ONHC(O)O-alkyl is $ONHC(O)OC(CH_3)_3$, and wherein ONHC(O)O-alkaryl is ONHC(O)O-CH_2-phenyl.

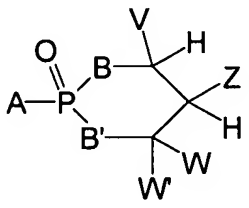
8. The compound of claim 1 further comprising a moiety covalently coupled to at least one of the C2'-atom, C3'-atom, and C5'-atom, thereby replacing the OH group at the at least one of the C2'-atom, C3'-atom, and C5'-atom, and wherein at least part of the moiety is preferentially cleaved from the compound in a target cell or target organ.

9. The compound of claim 8 wherein the moiety comprises a cyclic phosphate, a cyclic phosphonate, or a cyclic phosphoramidate.

10. The compound of claim 8 wherein the moiety has a structure according to Formula M1 or Formula M2



M1



M2

wherein A in M1 or M2 is O or CH_2 and replaces the 5'-OH group of the compound of Formula 1;

B and B' are independently O or NH, and where at least one of B and B' is NH then at least one of R_1 and R_2 is an amino acid that forms a peptide bond with the N atom of the NH, respectively, and where at least one of B and B' is O then at least one of R_1 and R_2 is $CH_2CH_2SC(=O)$t-butyl or $CH_2OC(=O)$iPr; and

V, W, and W' are independently hydrogen, alkyl, alkenyl, alkynyl, aryl, chlorophenyl, alkaryl, each of which is optionally substituted, and Z is hydrogen, CHWOH, CHWOCOW', SW, or CH_2aryl.

11. The compound of claim 1 further comprising a phosphate group covalently coupled to the C5'-OH group to form a phosphate ester.

12-31 (canceled).